REMARKS

The Examiner rejected claims 1, 6-8, 11, 13 and 14 under 35 U.S.C. §102(e) as being anticipated by U.S. Pat. No. 6,298,451 of Lin ("Lin"); and rejected claims 8, 11, 13 and 14 under §103(a) as being unpatentable over U.S. Pat. No. 6,564,131 of Hickman et al. ("Hickman") in view of Lin. Applicants request that these rejections be withdrawn because Lin and Hickman fail to disclose limitations recited in independent claims 1 and 8.

A.   Lin

The Examiner rejected independent claims 1 and 8 as being anticipated by Lin. Both claims include elements that are neither taught nor inherent in Lin. Claim 1 recites a storage system with separate metadata, gateway and storage services. Claim 8 recites a storage system with separate storage service and metadata service elements. The Examiner asserts that the elements specified, namely storage servers, metadata servers, and gateway servers, exist in Lin, but cites text which does not describe the relevant entities. Lin does not teach a storage system with separate metadata and storage server elements, as recited in claims 1 and 8, or a system that includes the gateway service recited in claim 1.

1.   *Lin does not disclose the separate and independent metadata and storage elements of claims 1 and 8*

Lin does not disclose or suggest a system having a metadata service that is separate and independent from the storage service. In the pending application, Applicants explain that the metadata service "can access metadata for various files in a storage system" (page 6), and that "metadata" is commonly known to include "predetermined information on files contained in the storage system" (page 14). The information may include information regarding the hierarchy of the file system and the location of the files (Pending application at page 14, lines 14-21.) The citations provided by the Examiner do not relate to metadata or predetermined information on

files contained in the storage system, such as file location and file system hierarchy information. In fact, the entire disclosure of Lin does not contain one reference to "metadata" or to a separate service that provides access to "predetermined information on files contained in a storage system." Thus, Lin fails to teach an independently scalable metadata service that is separate from a storage service, as recited in claims 1 and 8. Therefore, claims 1 and 8 and all claims depending from those claims (i.e., claims 6, 7 and claims 11, 13 and 14, respectively) are allowable over Lin.

2.   *Lin does not disclose a system including a plurality of gateway servers as recited in claims 1 and 14*

Claims 1 and 14 are further patentable over Lin for the additional reason that Lin does not disclose the recited plurality of gateway servers. Indeed, the scheme in Lin is explicitly described as not having gateway servers. As explained by Lin, "Prior art systems required a gateway computer which is not required by the present invention..." (Lin at col. 3, lines 49-52.) Lin also describes the disadvantages of using gateways:

> While the prior art systems are useful for their intended purposes, in order for those systems to work, gateway 14 must be tightly coupled to each server, and know the status of each server on a moment by moment basis. It would be beneficial to provide a system for performing task assignments, fail-over, and load balancing using a system which can be more loosely coupled but also operates very efficiently. The present invention provides such a system.

(Lin at col. 2, lines 45-52.) The stated purpose of Lin is to eliminate gateways. Thus, Lin actually teaches away from using gateways.

Lin does refer to prior art systems that included an intermediate server, which Lin calls a "gateway." But these prior art systems do not include any of the other requisite elements of the claimed inventions. Moreover, the prior art systems described in Lin only include a single gateway computer. (Lin, col. 1, lines 35-45.) The gateway service recited in claim 1 includes "a plurality of gateway servers" each hosting at least one client process. Similarly, claim 14 requires "a plurality of gateway servers." Since this

element is not disclosed by Lin, Lin cannot anticipate claims 1 or 14 for this additional reason.

For all of these reasons, Lin does not teach all of the elements of any of the pending claims 1, 6, 7, 8, 11, 13 and 14. Allowance of these claims is respectfully requested.

Hickman

The Examiner rejected claims 8, 11, 13 and 14 under §103(a) as being unpatentable over Hickman in view of Lin. The Examiner concedes that Hickman does not disclose a storage service and metadata service that are separate and independently scalable. The Examiner relies on Lin for this teaching. But Lin does not disclose a separate and independent metadata service, as explained above. Thus on this basis alone, the Examiner's rejection should be withdrawn.

Furthermore, as in Lin, Hickman fails to disclose a separate metadata service including a plurality of metadata servers. The Examiner cites to two sections of Hickman in support of the assertion that Hickman discloses the claimed metadata service (i.e., col. 5, lines 45-56 and col. 6, line 55 – col. 7, line 21). Neither of these sections discloses the claimed metadata service. In fact, as in Lin, there is not one reference to "metadata" in the entire Hickman patent.

The cited sections of Hickman refer to a "connection manager 140" and a "storage access module 160" having a "partition map cache 172." The partition map merely records "client-based" partitioning predicates and cannot be construed to provide a metadata service. Hickman's partitioning is based on the client, meaning that file storage for a given client is not scalable (it is all in one partition) and access to data for a given client is not scalable. Contrary to the Examiner's assertion, these elements cannot be construed to provide a metadata service. Rather, at most, these elements

provide just a form of cluster directory service. A metadata server, as described in the pending application, stores information about the file system hierarchy, the identity of files, and the location of the file data. (Pending application at page 14, lines 14-21.) Hickman does not disclose any such server.

Furthermore, the metadata service in the claimed invention is distributed over a plurality of servers that each access metadata independent of the metadata accessed by other servers (claim 1) or that each include an initialize function that provides metadata server location and metadata server capability information (claim 8). The connection manager 140 and storage access module 160 cannot be collectively construed to fit within either definition. That is, for each file access in the Hickman system, the connection manager 140 and storage access module 160 must both operate together to provide the access, and thus, they do not each include the recited initialize function or are "independent" of one another. Specifically, every time a file is accessed the connection manager 140 selects a web server 145 to handle the communication session (col. 5, lines 45-56), and storage access module 160 retrieves client-specific data from the storage system 104 (col. 6, lines 59-63). As a result, Hickman fails to disclose or suggest the claimed metadata service, which requires a plurality of independent servers, as recited in claims 1 and 8.
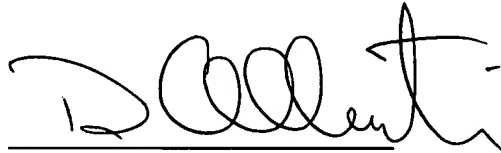
For all of these reasons, Hickman and Lin do not render obvious claim 8 or any claim depending from claim 8 (i.e., claims 11, 13 and 14).

CONCLUSIONS

For all of these reasons, Applicant respectfully asserts that all pending claims 1,

6, 7, 8, 11, 13 and 14 are in condition for allowance. The Examiner's early

reconsideration is respectfully requested. If the Examiner has any questions, the

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